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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,734	08/30/2001	Toshiaki Tarui	HITA.0101	6492

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EXAMINER

ALI, SYED J

ART UNIT	PAPER NUMBER
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2195

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/941,734

Applicant(s)

TARUI ET AL.

Examiner

Syed J. Ali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-13 and 16-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-13 and 16-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This office action is in response to the amendment filed May 12, 2005. Claims 2-13 and 16-19 are presented for examination.
2. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior office action.

Claim Objections

3. **Claims 5 and 16 are objected to because of the following informalities:**
 - a. In line 9 of claim 5, "each of partitions means" should read: "each of the partitions, means".
 - b. In line 8 of claim 16, "each of partitions" should read: "each partition".
 - c. In line 9 of claim 16, "each partitions" should read: "each partition".
 - d. In line 12 of claim 16, "said partitions" should read: "said partition".Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. **Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

5. As per claim 5, the limitation of “means for monitoring input/output performance of said partitions” is repeated within the claim. It is not clear that the second recitation of the limitation differs in any way from the first. Accordingly, the second occurrence of the phrase has not been given patentable weight.

Claim Rejections - 35 USC § 102

6. **Claims 5, 10-13, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Kleinsorge et al. (USPN 6,226,734) (hereinafter Kleinsorge).**

7. As per claim 5, Kleinsorge teaches the invention as claimed, including a computer comprising:

one or more CPUs; a main memory; and one or more input/output means, wherein said computer is capable of being divided into a plurality of partitions (col. 6 lines 14-18; col. 12 lines 5-17),

said computer further comprises means for controlling allocation of the input/output means for the partitions (col. 7 lines 1-9, 15-19), means for monitoring input/output performance of said partitions (col. 4 line 59 - col. 5 line 3; col. 27 lines 36-51), means for prescribing an allocation ratio of the input/output means for each of the partitions (col. 7 lines 1-9), and means for automatically changing said prescribed input/output ratio of the input/output means for said partitions without mediation of an operator when the input/output performance of said partitions falls to a prescribed level (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

8. As per claim 10, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 5, further comprising means for changing input/output allocation of each partition in proportion to CPU allocation for said partition (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

9. As per claim 11, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 5, wherein input/output allocation for a partition is changed according to said means for monitoring performance of each partition, said monitored result, and conditions prescribed by a user (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

10. As per claim 12, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 5, further comprising means for interrupting communication conducted by a first partition after data of a prescribed size has been transmitted (col. 30 lines 39-44), means for changing over to communication that another partition requests after said interruption (col. 30 line 45 - col. 31 line 4), and means for resuming the communication of the first partition after the data of the prescribed size has been sent through the communication of said another partition (col. 31 line 54 - col. 32 line 7).

11. As per claim 13, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 5, further comprising means for dynamically changing an input/output adapter to which each partition can gain access (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

As per claim 16, Kleinsorge teaches the invention as claimed, including a computer system having one or more CPUs, a main memory and one or more input/output means (col. 6 lines 14-18; col. 12 lines 5-17), the computer system comprising:

means for logically dividing the computer system into a plurality of partitions (col. 6 lines 14-18; col. 12 lines 5-17), each partition including a subset of the CPUs which works independently from the remaining CPUs or under time-sharing manner with the remaining CPUs, a subset of the main memory, and a subset of the input/output means (col. 6 lines 14-18);

means for setting an allocation ratio of the input/output means for each of the partitions independently from an allocating ration of the CPUs for each of partitions (col. 7 lines 1-9, 15-19); and

means for automatically changing said allocation ratio of the input/output means for a partition when an input/output performance of said partition falls to a prescribed level (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

Claim Rejections - 35 USC § 103

12. **Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kleinsorge in view of Bauman et al. (6,279,098) (hereinafter Bauman).**

13. As per claim 6, Bauman teaches the invention as claimed, including a computer as claimed in claim 5, further comprising means for recording time used by a user for having increased input/output allocation for partitions (col. 1 lines 51-61) and means for billing

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additional charge to the user of said partition according to results recorded by said means for recording (col. 1 lines 51-61).

14. It would have been obvious to one of ordinary skill in the art to combine Kleinsorge and Bauman since the redistribution of processing resources allows larger tasks to take on a larger portion of a system's resources while taking away excess resources from smaller resources. Thus, the system can make the most efficient use of its limited resources, thereby improving performance.

15. **Claims 2-4, 7-9, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleinsorge in view of McColl et al. (USPN 6,763,519) (hereinafter McColl).**

16. As per claim 7, Kleinsorge teaches the invention as claimed, including a computer comprising:

one or more CPUs; a main memory; and one or more input/output means, wherein said computer is capable of being divided into a plurality of partitions (col. 6 lines 14-18; col. 12 lines 5-17),

said computer further comprises means for controlling allocation of the input/output means for the partitions (col. 7 lines 1-9, 15-19).

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17. McColl teaches the invention as claimed, including means for comparing processing capability of each partition with a prescribed lower limit capability of the partition according to SLA (Service Level Agreement) (col. 19 lines 13-56), means for determining whether said capability is less than the lower limit capability is caused by a CPU bound or an input/output bound according to CPU performance and input/output performance of the partition (col. 19 lines 13-56), and means for increasing input/output allocation to said partition when the input/output bound caused said capability to drop to the lower limit capability and there is surplus in input/output performance of other partitions (col. 19 lines 13-56).

18. It would have been obvious to one of ordinary skill in the art to combine Kleinsorge and McColl since the provision of service levels allows simple reassignment of resources in a continuous manner. This allows the system to monitor performance and make adjustments on the fly or to allow a system administrator to make the adjustments.

19. As per claim 2, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 7, further comprising means for monitoring input/output performance of said partitions (col. 4 line 59 - col. 5 line 3; col. 27 lines 36-51).

20. As per claim 9, McColl teaches the invention as claimed, including a computer as claimed in claim 2, further comprising means for transmitting the monitored result of the input/output performance to an external computer (col. 19 lines 13-56), and means for changing input/output allocation of said computer according to SLA as determined and requested by said external computer (col. 19 lines 13-56).

21. As per claim 18, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 2, wherein input/output allocation for a partition is changed according to said means for monitoring performance of each partition, said monitored result, and conditions prescribed by a user (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

22. As per claim 3, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 7, further comprising means for an operator to instruct input/output allocation for each partition (col. 2 line 54 - col. 3 line 6; col. 27 lines 36-51; col. 27 line 65 - col. 28 line 21).

23. As per claim 4, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 7, further comprising means for booking input/output allocation for each partition (col. 23 lines 24-36; col. 23 line 53 - col. 24 line 12).

24. As per claim 8, McColl teaches the invention as claimed, including a computer as claimed in claim 7, further comprising means for recording, when the case is the input/output bound and no surplus of input/output performance is found in other partitions, that SLA has not been maintained, and means for reducing a charge billed to a user according to results recorded by said means for recording (col. 19 lines 13-56).

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25. As per claim 17, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 7, further comprising means for changing input/output allocation of each partition in proportion to CPU allocation for said partition (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

26. As per claim 19, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 7, further comprising means for interrupting communication conducted by a first partition after data of a prescribed size has been transmitted (col. 30 lines 39-44), means for changing over to communication that another partition requests after said interruption (col. 30 line 45 - col. 31 line 4), and means for resuming the communication of the first partition after the data of the prescribed size has been sent through the communication of said another partition (col. 31 line 54 - col. 32 line 7).

Response to Arguments

27. **Applicant's arguments filed May 12, 2005 have been fully considered but they are not persuasive.**

28. Applicant argues, "*Kleinsorge fails to disclose any means for changing allocation ratio of I/O means to a partition according to monitored I/O performance. In particular, Kleinsorge is directed to 'allocation change by operators' (col. 3, line 5). The column 12 of Kleinsorge is also entirely silent as to 'automatic I/O allocation change'.*"

29. Applicant has erroneously limited Kleinsorge to one of the disclosed embodiments. While an operator can change the partition allocation, the allocation can also be automatically adjusted (col. 2 lines 54-61, "LPARs are set up by an administrator statically, but can respond to changes in load dynamically", "each partition can take over the entire physical...system as the workload shifts without...operator intervention.") Just as Applicant discloses an embodiment that allows an operator to control the allocation (e.g. claim 3) in addition to controlling the allocation automatically (e.g. claim 5), Kleinsorge allows the allocation to be adjusted manually by an operator or without the intervention of an operator.

Conclusion

30. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed J. Ali whose telephone number is (571) 272-3769. The examiner can normally be reached on Mon-Fri 8-5:30, 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai T. An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Syed Ali
July 12, 2005



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